

What is claimed is:

1. System for producing a presettable polarization mode dispersion, with
  - an initial polarization splitter/combiner element, which divides the incoming signal into two signals vertical polarization alignment to one another,
  - a delaying unit, which is installed in one of the signal paths of the two (split) signals,
  - a second polarization splitter/combiner element, which reunites the two separated signals, distinguished in that, for the production of a second-order polarization mode dispersion, an element is provided which twists the polarization main axes ahead of and behind the element toward one another by an appropriate angle, and that the light signal emitted from this element is fed into a device, which likewise consists of a polarization splitter/combiner element, a delaying path, and an additional polarization splitter/combiner element for bringing the two signal paths back together.
2. System according to Claim 1, distinguished in that the angle by which the element twists the polarization main axes toward one another is adjustable.
3. System according to Claim 1 or 2, distinguished in that the angle is approximately 22.5 degrees.
4. System according to one of Claims 1 to 3, distinguished in that the non-utilized input connector of the second polarization splitter/combiner element serves as an input connector for the signal, that this signal then runs through the delaying path and the first polarization beam divider in the opposite direction to the incoming signal, and that this signal is uncoupled at the fourth gate of the first polarization splitter/combiner element.

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5. System according to one of Claims 1 to 4,  
distinguished in that the delaying path is activated optically or electrically.
6. System according to Claim 5,  
distinguished in that the beam in the delaying path is conducted as a free beam,  
and that the path length is altered.
7. System according to Claim 5,  
distinguished in that fibers as delaying path are exposed to mechanical forces for  
the activation of the delay.
8. System according to one of Claims 1 to 7,  
distinguished in that, for purposes of adjusting the angle, two PM fibers are  
spliced together at an angle corresponding to the angle to be adjusted.
9. System according to one of Claims 1 to 7,  
distinguished in that, for purposes of adjusting the angle, optical slip rings and/or  
oblique-standing wave plates are installed.
10. System according to one of Claims 1 to 9,  
distinguished in that the polarization splitter/combiner elements are constructed  
as PBS cubes or as all-in-fiber elements.
11. System according to one of Claims 1 to 10,  
distinguished in that all light paths are polarization-receiving.
12. System according to Claim 11,  
distinguished in that free-beam paths and/or PM fibers form the light path.

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